

## CLAIMS

**1ST CLAIM:** the industrial invention concerns mobile electronic equipment with support structures, including equipment to be located behind goals and anchored to the football ground in soccer or 5-a-side football matches.

The support structure of the equipment consists of assembled support bars, metal plates and components in other strong fibres. The components are basically tubular, but other dimensions and shapes are allowed, such as oval-shaped components.

Stiff basements connect bars and other components support the electronic devices located opposite and parallel to the components buried under the lawn, behind the goals and at the back of the goalkeepers.

The anchoring components include stiff basements to be fixed to the ground. Other anchors of any size and material – whether metal or synthetic – may be buried under the lawn to firmly support the whole frame.

**2ND CLAIM:** mobile electronic equipment according to claim no. 1, whereby the electronic system includes a set of assembled electronic components, ensuring the solution to the problem which is the aim of this industrial invention, i.e., how to enable a referee to call a goal in real time, with no possibility of an oversight. The equipment assures that the football has crossed the goal line and all mistakes on behalf of the referee are avoided by means of a lawful method.

The mobile electronic equipment for soccer and 5-a-side football, described in claims no. 1 and 2, includes all the connected systems for the purpose of the invention: a stop-watch, whether rectangular, round or square, which houses the electronic systems – whether metal detectors, infrared or Vibracall – whereby the referee and the linesmen are informed in real time in order to assess the correctness of the signalled information and call a goal immediately, with no possible objection by the teams or their supporters.

**3 RD CLAIM:** mobile electronic equipment, described in claims no. 1 and 2, using any components available worldwide in order to ensure technologically advanced and fast solutions. Worldwide manufacturing companies in the field of electronic devices may supply suitable electronic systems and components to promptly inform the referee when the football has entirely crossed the goal line. The movement of the football is thus detected and transmitted in real time to both the referee and his co-operators, thanks to suitable electronic stop - watches, equipped with a Vibracall and displaying the time when the goal is scored as well as current date and time (whether in a 12- or a 24-hour format), similar to an ordinary stop - watch, but updated to include a radar-based detection system.

**4 TH CLAIM:** The mobile electronic sports equipment described in claims no. 1, 2 and 3 includes a claim for a different version, whereby the equipment is buried behind the goal, at the back of the goalkeeper. The equipment is perfectly effective and starts operating when the football match starts. Broken or intentionally damaged electronic components may be easily replaced; the bearing structure protects the components which may be removed and replaced at any time, before the match starts, after the interval or at the end of the match. In the event of system failure the maintenance technician is informed by means of suitable transmitting sensors, which allow assessing the conditions of the equipment in real time, through the stop - watch that the referee and the linesmen are provided with. The claim also includes a claim for the electronic bench, as technically described above, which houses the fourth official.

**5 TH CLAIM:** The electronic sports equipment - a new fully-fitted football ground - described in the above claims no. 1, 2, 3 and 4, also includes all the electronic systems contained in the electronic cabin, described in the attached drawings, i.e., cameras and sensors that send signals to the referee and linesmen in real time, at any time

throughout the match, whenever a foul is committed by a player who is not punished accordingly. In this case the referee is informed through the sensors located in the electronic stop-watch and, by pressing a button on the watch, he may decide whether to send the faulty player off the field.

Another instance is when, during the match, the referee cannot see a penalty. In this Case his co-operator informs him promptly by means of the electronic system. If the fourth official has noticed an offside that the referee and the linesmen are not aware of, he may call the referee by means of a transceiver, whereby a penalty is called for an offside, thus preventing all the enraged objections that arise when a goal is scored as a consequence of that unpunished foul.

In any case, the equipment is a perfect solution whenever the referee and his staff need To discuss and make a joint decision.

The electronic cabin may be located near the centre line, between the benches of the playing teams. Electronic displays of different sizes may be located beside the cabin and equipped with LED displays to promptly inform the public of the referee's decisions. LED light up when the sensor in the stop-watch gives an input or when it is triggered by means of the electronic system itself. All the spectators may immediately read the decisions made by the referee and the fourth official is sheltered from any weather conditions as well as any excessive reactions by the public.

This invention would allow making any decisions in a lapse of time that is not over a Second , which is useful to referees and their co-operators when making joint decisions. This would moreover avoid any delay that may lead to excesses, invasions of the playing area, protests and players sent off the field.

Prototypes of suitable sensors are attached hereto. These sensors are to be fitted in the bladder of the football or inside the hexagons and pentagons with suitable rubber pads (whether hard or soft) to avoid any bumps on the football surface which would hinder

the actions in the game. Hexagons and pentagons would not be damaged and the football may be detected as soon as it has fully crossed the goal line.

**6TH CLAIM:** The electronic sports equipment – a new fully-fitted football ground – described in the above claims no. 1, 2, 3, 4 and 5, also includes all the necessary systems for the implementation of the electronic flag, whereby the referee may co-operate more effectively with the fourth official and the linesmen during a soccer or 5-a-side football match. Suitable chips located in the flag signal an impulse given by the fourth official or a linesman who may inform the referee of any foul, such as an offside. In this instance, the fourth official triggers an impulse when the football is sent to a forward player. The signal is recorded by the flag and the linesman presses a button in turn when following the action, so that the control station may check whether the sequence of impulses may determine an offside, if the impulse was sent by the linesman prior to the fourth official's signal. In this case, the stop-watch of the referee starts vibrating and the action is stopped for an offside. On the contrary, if the fourth official's signal was sent before the linesman's the action is regular and the control station cancels both signals. Likewise, all actions during the game may be signalled to the referee by this method or Similar methods, including Vibracall signals on the flag.